

ABSTRACT OF THE DISCLOSURE

An oilfield data analysis system is based on a four-tier software model which includes a "shared earth model" and a federation of "directory services". The first tier is a universal graphical user interface (GUI) which can operate on any inexpensive computer as well as on an expensive workstation, i.e. a "web browser". The second tier is an application server which is coupled to users via the worldwide web and serves geoscientific software applications. The third tier is a geometric modelling system where geometric data is stored and processed. The third tier embodies the "shared earth model". The fourth tier is a database management system where non-geometric data is stored. According to the invention, there can be (and preferably are) multiple instances of each tier. Communication of data between different tiers is accomplished via XML data exchange. According to a presently preferred embodiment, the geoscience applications served by the second tier are written as JAVA servlets and applications may communicate with each other without human direction by registering requests with "directory services". Applications interested in certain types of data "listen" for "data events" being registered with directory services. The cost of utilizing an application can be based on a time-rental billing operation which is carried out automatically via directory services.

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